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**MINING POLICY AND ENVIRONMENTAL DAMAGE: CASE STUDY IN CENTRAL SULAWESI**

**Ani Susanti<sup>1\*</sup>, La Husen Zuada<sup>2</sup>, Irwan Waris<sup>3</sup> and Taufik<sup>4</sup>**

<sup>1,2,3</sup>Department of Public Administration, Faculty of Social and Political Sciences Tadulako University, Indonesia;

<sup>4</sup>Coordinator of the Central Sulawesi Mining Community Network Campaign

**ABSTRACT**

This paper reviews mining policies and environmental damage in Central Sulawesi. It took the case in three regions, namely Morowali Regency, North Morowali Regency, and Palu City as areas where mining activities are carried out. The finding shows that destitute mining activities result in environmental damage that threatens the lives of local communities. This paper recommends the importance of the government to make firm and sustainable mining management policies.

**KEYWORDS:** policy, mining, environmental damage

**1. INTRODUCTION**

Indonesia is a country that has abundant natural resources, particularly in the mining sector. The United States Geological Survey (USGS) notes that Indonesia is ranked 6th as the world's mining producer. Different types of mining include petroleum, natural gas, minerals, and coal contained in Indonesia's territory. The potential of Indonesian oil mines is ranked 25th in the world, while mineral mining is ranked in the world's top ten. The availability of mineral mines in Indonesia, including; 2.3% of world gold reserves (rank 7), in 8.1% (rank 5), copper 4.1% (rank 7), and nickel 2.1% (rank 8). The potential content of the geological materials from the earth is one of the prime-movers in development, furthermore to the potential of forest resources, agriculture, marine, and fisheries (Suaib, Upe, & Zuada, 2019).

Constitutionally, the mining management and control policy is regulated in Article 33 of the 1945 Constitution and Law Number 4 of 2009 concerning Mineral and Coal Mining, as well as several related laws and regulations including Law Number 41 of 1999 concerning Forestry, Law Act Number 25 of 2007 concerning Investment, Act Number 40 of 2007 concerning Limited Liability Companies, and Act Number 23 of 2014 concerning Regional Government. The legality of the policy confirms that various potential natural resources are controlled by the state. The state's right to control contains the authority to regulate, manage, and supervise the management of natural resources so that they are used to the maximum extent for the prosperity and welfare of the people.

The implications for the hope of prosperity and welfare of the people are manifested in the form of accelerating the pace of national and regional development through increased state income, employment, industrial development, and trade. It is on this basis that in almost all provinces in the province there are mining businesses, small, medium, and large scale. On a medium and large scale

business (UMB), mining and quarrying business activities are carried out by foreign-owned enterprises, national private companies, and state-owned (BUMN) and regional government (BUMD) enterprises. While on the Small Business scale most of them are non-business enterprise individuals. In particular, nickel mining is managed on a Medium and Large Business Scale (UMB) through a Mining Business License (IUP) or Work Contract.

Central Sulawesi is one of the provinces included in corridor 4, namely the Sulawesi - North Maluku Economic Corridor within the framework of the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development as the Center for Production and Processing of Agricultural, Plantation and National Fisheries Products. This program was poured into the Presidential Regulation of the Republic of Indonesia Number 32 of 2011 concerning the Master Plan for the Acceleration and Expansion of Indonesian Economic Development (MP3EI) 2011-2025. The entry of the Central Sulawesi region as a development priority area was reaffirmed in 2015 through Presidential Regulation No. 2 of 2015 which regulates priority industrial estates outside Java. Through the presidential decree, Central Sulawesi has become one of the priority development areas in the mining sector, bearing in mind that this region has a variety of mineral resources which are quite diverse, have considerable resources and have high economic value.

Following the mandate of the Law of the Republic of Indonesia No. 4 of 2009 concerning Mineral and Coal Mining, in one of its articles mentions the prohibition to export minerals in the form of raw materials. In other words, before being exported, raw materials must go through processing into semi-finished goods. This means that there must be a processing factory in the country. Mining policies regulated through Law no. 4 of 2009 and the regional autonomy policy regulated in Law No. 23 of 2014 concerning Regional Government, is behind the emergence of smelter factories and hundreds of mining business permits in Central Sulawesi. Mining affairs which are a concurrent authority between the national government and the regional government put mining business licenses as a matter of regional government, until 2016 based on data from the Ministry of Energy and Mineral Resources, the number of IUPs in Central Sulawesi was 437.

Several national and multi-national corporation (MNC) mining companies operate in Central Sulawesi. PT. Citra Palu Mineral subsidiary of the Bakri Group (Bumi Resource) is a mining company that has a license to explore a gold mine in Poboya, Palu City. Also, a well-known mining company in Central Sulawesi is the Indonesia Morowali Industrial Park (IMIP), which operates in Morowali Regency. PT. IMIP is one of the largest multi-national corporation (MNC) companies in Indonesia with an authorized capital of 40,000,000 USD. The shareholders of PT. IMIP is Shanghai Decent Investment (Group) of 49.69%, PT. Sulawesi Mining Investment 25%, and PT Bintang eight Investama as much as 25.31%. PT. IMIP houses at least 16 companies and employs approximately 31,000 people by the end of 2018.

The previous data illustrates that the Province of Central Sulawesi is positioning the mining sector as the driving force of the regional economy and a source of foreign exchange for the country. In the logic of economic growth, it is only natural that local governments choose to carry out large-scale exploitation to utilize existing resources. However, the alternative to empower natural resources by the government ignores socio-ecological aspects. This can be seen from the rigidity of environmental damage caused by mining activities. Thus, although the exploitation of mining products contributes quite substantially, the damage it causes is also very severe. Therefore, the availability of mineral resources and ecological disasters that threaten the nation's next-generation becomes a very serious problem.

Environmental damage in Central Sulawesi has become a serious problem around the mining areas of Morowali Regency, North Morowali, and Palu City. Floods, landslides, water pollution, air pollution, forest destruction, and social conflicts are circumstances that have affected mining areas in Central Sulawesi. These factual conditions greatly threaten the existence of local communities, both from ecological aspects and socio-economic aspects. Therefore, in this paper, it is considered important to describe three basic matters, namely: (1) Government policies on natural resource management, (2). Mining activities and environmental damage in Central Sulawesi, (3), Analysis of Firm Mining Management Policies.

## 2. LITERATURE REVIEW

Government policy or public policy is the result of intensive interaction between policymakers based on the phenomenon that must be sought a solution. Policy is a written rule which is a formal organizational decision, which is binding, which regulates behavior to create new values in society (Dunn, 1999). The policy will be the main reference for members of the organization or members of the community in behavior. Policies, in general, are problem-solving and proactive. Unlike Laws and Regulations, policies are more adaptive and interpretative, although policies also regulate what is permissible, and what is not permissible. Policies are also expected to be general but without eliminating specific local characteristics. Policies must provide opportunities for interpretation according to specific conditions that exist."

Thomas Dye stated that public policy is whatever the government's choice to do or not do something (Dunn, 1999). The definition implies that the public policy was made by a government agency and not private; Public policy concerns alternatives that must be made or not by the government agency. Public policies are fettering decisions for many people at the strategic or outline level made by public authority holders (Suharto, 2008). In Subarsono's opinion, public policy can be in the form of Laws, Government Regulations, Provincial Government Regulations, Municipality/Regency Government Regulations, and Mayor/Regent Decrees (Nugroho, 2003).

Thomas R. Dye mentioned that there are three components in policymaking, namely public policy, policy stakeholders, and policy environment (Dunn, 1999). These three elements share each other and

influence each other. For example, policy actors can have an interest in policy, but they can also be influenced by government decisions. The policy environment also influences and is influenced by policymakers and public policy itself.

In the management of natural resources particularly in the mining sector, state policy refers to article 33 of the 1945 Constitution which states that the earth, water, and natural resources contained therein are controlled by the State and used to the maximum extent possible for prosperity of the people. The national economy is organized based on economic democracy with the principles of togetherness, efficiency, fairness, sustainability, environmental insight, independence, and by maintaining the balance, progress, and unity of the national economy. Based on that, it is appropriate for the state to maintain the endowment of natural resources both on land and at sea for sustainable development.

Natural resource management, especially mining must refer to the 1945 Constitution, especially Article 33 which mandates management for the maximum prosperity of the people. The existence of Law (Law) Number (No.) 4 of 2009 concerning Mineral and Coal Mining is one form of the implementation of the country's management rights to these resources. The Mineral and Coal Mining Law brings the spirit of independent, reliable, transparent, competitive, efficient and environmentally friendly mining management to ensure sustainable national development. The law also emphasizes the importance of managing mineral and coal mining that can provide tangible added value to national economic growth and sustainable regional development.

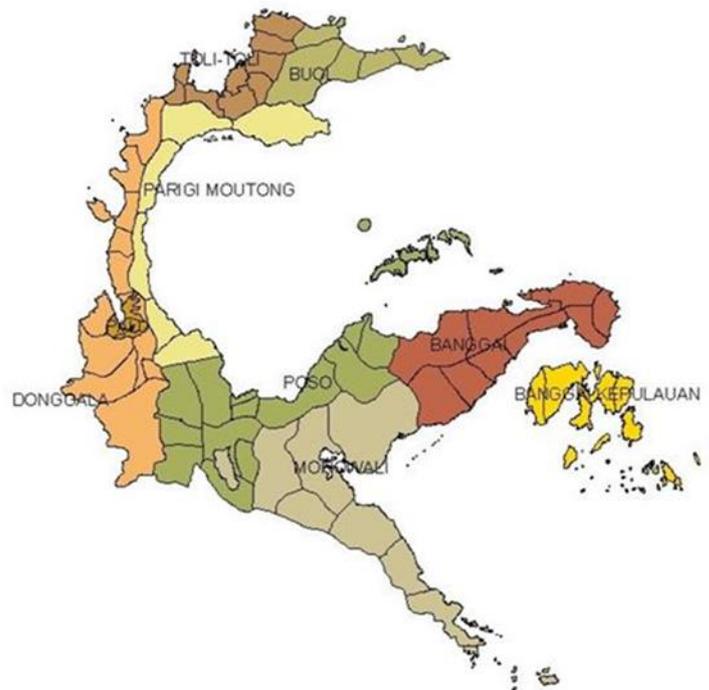
### **3. METHODOLOGY**

This research uses the descriptive qualitative method. The data collection process is obtained through field observations related to mining activities. Then the observations written in narrative writing to complete the observations, a collection of documents from relevant media reports and research reports was carried out, as well as limited interviews. The collected data is then sorted and translated into narrative form. To complete the narration, a literature study of similar research results was also conducted. Furthermore, it is strengthened by including various concepts and theories that are relevant to the topic.

### **4. RESULT AND DISCUSSION**

#### **Mining Activities in Central Sulawesi Province**

Central Sulawesi is a province in the central part of Sulawesi Island which was founded in 1964, which was previously part of the North and Central Sulawesi Province. In the beginning, Central Sulawesi was divided into four Regencys, namely Donggala, Poso, Banggai, and Buol Toli-toli. In the era of regional autonomy, Central Sulawesi experienced a booming regional expansion as well as other regions, so that now its territory is divided into 12 Regencys and 1 city. The area of Central Sulawesi reaches 61,841.29 km<sup>2</sup>, with a population of 3,222,241 people (BPS, 2015). This acquisition also placed Central Sulawesi as the largest area among all provinces on Sulawesi Island and has the second largest population on Sulawesi Island after South Sulawesi.



**Figure 1. Overview Map of Central Sulawesi**

The agricultural sector is the core of the economy of Central Sulawesi. In 2017 the GRDP contribution of the agricultural sector was 28.92%, followed by other sectors 24.47%, mining 12.83%, construction 12.50%, industry 12.34%, and trade 8.94%. (BPS, 2018). Although the agriculture sector is a major contributor to Central Sulawesi's GRDP, over the past three years (2015-2017) the contribution of this sector has tended to decline, on the other hand, the mining sector, which was in the fourth position, managed to rise in the third position to shift the construction sector. The GRDP growth of the mining sector in Central Sulawesi is related to the presence of mining companies that carry out mining and processing of mining products, including PT. International Morowali Industrial Park along with a number of its subsidiaries.

In terms of mining content and historical aspects, the existence of mining companies in Central Sulawesi is minimal. Noted, the natural content of Central Sulawesi is petroleum and nickel, and even then it is very limited. However, the existence of a nickel mine had taken place before regional autonomy, where PT. INCO (now PT.Vale Indonesia) is the only mining company that has long held a mining work contract in Central Sulawesi. PT. INCO is located around the borders of Central Sulawesi, South, and Southeast Sulawesi, namely Morowali and North Morowali Regencies. The nickel content in Morowali and North Morowali is the largest in Central Sulawesi. Thus, the mention of Central Sulawesi as a mining-producing area is less precise, on the contrary, the more suitable term is a new area of the mining industry and business (Suaib et al., 2019).

The mining content and government policies have stimulated the arrival of investors, which is marked by the emergence of national and multi-national corporation (MNC) companies in Central Sulawesi. PT. Citra Palu Mineral subsidiary of the Bakrie Group (Bumi Resource) is a mining company that has a permit to explore a gold mine in Poboya, Palu City. PT CPM obtained a Special Production Business License (OP) based on the Decree of the Minister of Energy and Mineral Resources (ESDM) Number 422.K / 30.DJB / 2017, dated November 14, 2017. The ESDM Ministerial Decree contains several things including the stages CPM production operations in an area of 85,180 hectares.

Poboya is one of the urban villages in the Capital of Central Sulawesi Province, Palu City. Since the people's mining boom in 2008, to this day Poboya has become the target of the company to make profits and become the center of mercury circulation that threatens 400,000 people of Palu City. No half-hearted, to this day identified that there are 5 (five) illegal companies (PETI) operating. The company without permission consists of: PT. Indo Asia Kimia Sukses, PT. Mahakam River, PT. Madas, PT. Panca Logam Utama and PT. Geotechnical Engineering Dynamics. The company also carries out mining activities within the Grand Forest Park and destroyed 200 hectares of the KPA / TAHURA area. The results of the Jatam Central Sulawesi investigation of gold mining in Poboya, the location of the gold mine in the mountains of Poboya has been legally controlled by PT CPM since 1997 through a contract of work system, but at this time the location of the mine is located at the mountain point namely the Mosule mountains, Vatutempa, and Rano is also controlled by four PETI, first Mahakam, PT MADAS, Panca Logam, and Eka Geotechnical Dynamics.

Another well-known mining company in Central Sulawesi is Indonesia Morowali Industrial Park (IMIP) as the largest nickel company in Indonesia with an authorized capital of 40,000,000 USD. The shareholders of PT. IMIP is Shanghai Decent Investment (Group) of 49.69%, PT. Sulawesi Mining Investment 25%, and PT Bintang eight Investama as much as 25.31%. PT. IMIP houses at least 16 companies and employs approximately 31,000 people by the end of 2018.

In addition to international companies, national and local companies are present to take advantage of investment opportunities in Morowali. Large-scale national companies including PT. Central Omega Resource Tbk (PT. COR). The company is in charge of 6 subsidiary companies, namely PT. Mulia Pacific Resource (MPR), PT. Mega Buana Resource (MBR), PT. Itamatra Nusantara, PT. COR Industri Indonesia (CORII), PT. Macrolink Omega Adiperkasa, PT. Bumi Konawe Abadi. The existence of a mining company in Morowali according to information compiled by the Central Sulawesi Mining Community Network is owned and supported by elites, local elites, and former military. A number of names such as - Tommy Winata (national businessman), Viktor Laiskodat (Nasdem Politician / NTT Governor), Ahmad Ali (Nasdem Politician / Member of Parliament), Sinton Panjaitan (former Kopassus Danjen), Anwar Hafid (Democratic Politician / Former Morowali Regent) - is said to have a mining company in Morowali.

The presence of ex-military in the mining business and industry in Central Sulawesi gave rise to the name Bintang Delapan as one of the shareholders of PT. IMIP. Information obtained from JATAM Central Sulawesi, stated that behind the name of the company, the term Bintang Eight by activists often referred to it as a mining company supported by eight generals. Based on reports from Christopel Paino and Sapariah Saturi, there was the name of Lt. Gen. Purn. Sintong Panjaitan (former Kopassus Danjen) as President Commissioner of the Eight Star Group and Maj. Gen. Purn. Hendarman Supandji (Former Danpuspom) as President Commissioner of PT. Eight Stars Investama (Report of the Tanah Merdeka Foundation) (Paino & Saturi, 2014). Meanwhile, to identify six other generals is difficult to prove. Two other generals who are often mentioned in civil society and media coverage are General Luhut B. Panjaitan and Lt. Gen. Purn. Prabowo Subianto as the figure behind the Eight Stars. However, the two generals' last names are difficult to prove. Luhut's presence seemed to only represent the government as an investment party. While based on media searches East Tribun, Tirto news.id and detik.com involvement of Prabowo Subianto in PT. Bintang Delapan not found (Sumardi, 2018).

Previously, based on the Mining Society Network report, the involvement of former Generals in the mining business was a scene that was frequently encountered. The JATAM investigation report titled Mining Oligarchy in the Presidential Candidate Contest mentions the Generals involved in the mining business, namely General Retired. Luhut Binsar Panjaitan as the owner of the Toba Sejahtera company which explored the mine in Kalimantan, General Ret. Fahrul Rozi as Commissioner of Toba Sejahtera and commissioner of PT. ANTAM, Lieutenant General. Purn Suaidi Marasabessy Director of PT. Kutai Energi, Lt. Gen. Purn. Prabowo Subianto owns Nusantara Energy Resource (JATAM, 2018). The involvement of ex-military in business is rather difficult to categorize as a group of professional entrepreneurs, given that their careers are mostly spent in the military and not as professional entrepreneurs. On the contrary, their involvement appears to be more influenced by their expertise in presenting a sense of security and ability to organize violence that often threatens the survival of professional business people. This military and business alliance extended the practice that often occurred during the New Order era, including the Eighth Joint Committee (Kodel) established by Soegeng Suryadi, which included the name of General Ponjto Sutowo.

### **Environmental Damage in Morowali Regency, North Morowali Regency, and Palu City**

Mining activities although able to move the regional economy, but behind that, it is some environmental damage issues. Since the operation of many mining companies, residents around the mine began to complain about environmental pollution, water, air to the ground. The activities of PT Central Omega Resources Industri (CORII) in North Morowali Regency have caused clean water as a source of livelihood for the residents to be mixed with mud (Andika, 2018). Not to forget the coast of Morowali which used to be blue sea has become a yellow sea. The area of the yellow ocean is expanding when the rainy season arrives. Rainwater sourced from the mountain flowed swiftly without being overpowering and submerged several residents' land.



Source: Jatam Central Sulawesi/Mongabay Indonesia

**Figure 2. Coastal Views in North Morowali Regency and Mountain Slopes in Morowali Regency, Central Sulawesi**

PT. COR Industri Indonesia (PT. CORII) is a subsidiary of PT. Central Omega Resources, which was established in 2013 but only operated in 2016 as a smelter that produces Ferro Nickel (FeNi), this smelter product is the main raw material for producing stainless steel. Besides PT. CORII, PT. COR also still has 2 other subsidiaries operating and exploiting the North Morowali Regency, namely PT. Imatra Nusantara and PT. Mulia Pacific Resources (PT.MPR), which both have adjoining operations, with PT. CORII as a factory/smelter and port.

Geographical Location of the entrance of PT. CORII, PT. Itamatra and PT. MPR is at the point of  $1^{\circ}56'20,76$  "LS and  $121^{\circ}18'57,51$ " East with the division of work area that forms a triangle. To the north of PT. The MPR which exploits directly borders 'Gunung Bendera' and PT. SPS. South of PT. Itamatra Nusantara which also exploits directly borders with PT. Integra Technology Nusantara (PT. ITN). Both PT. MPR and PT. Itamatra Nusantara is located at the location of 'Mount Lambolo' which borders the mountain 'Mount Bau Satu' (bare language) and the forest area to the west. Meanwhile, PT. CORII (factory/smelter) is located in the east of the two companies, right on the coastline of the Lambolo hamlet south. If viewed through satellite imagery or a map sheet, it will be very apparent that the location is right at the entrance of the hamlet and is adjacent to the location of the residents in Ganda-Ganda village, Lambolo hamlet. In fact, according to information, the company's boundary markers are located on the shore, in other words, residential areas are included in the company's permit concessions.

The location of the three companies' operations with several other companies in the vicinity - which are very close to settlements and even side by side with residents, caused various problems for the community around the mine. Starting from health problems, livelihoods, access to and from damaged

villages, the threat of natural disasters to environmental pollution and damage. More or less the last 2 years since the operation of PT. CORII, environmental damage is increasingly massive. The river that used to be a source of drinking water, bathing, washing, and toilet facilities can no longer be used properly. Under normal conditions (without rain and flood), river water conditions remain yellow and muddy. Not to mention if it rains, the river will become flooded along with mud that drops from the headwaters where PT. Itamatra and PT. MPR operates.

In 2018, Lambolo Hamlet in the floods accompanied by mud that inundated all residents and worship facilities (mosques). Flooding accompanied by mud that occurred, besides being a shipment of water from the exploitation sites of the two companies, also appeared to come from CEKDAM which was 'broken' and entered mixed with the Lambolo river to cause a large mud puddle. The people who live downstream are the most restless when floods come, as long as their houses are made of wood (houses on stilts) and are right above the confluence of seawater and flooded rivers, not to mention the threat of landslides from the company's exploration area which until now according to residents, information has not been reclaimed at all. According to residents, in the past when the rain was high, the debit of water in the river did increase but it was still within reasonable limits, not worrying and not muddy as it is now when flooding, even without mud, was different from when it was flooded.

In Particular, women who live around the mine are most affected by the company's activities. As a housewife who takes care of her children daily, washing, cooking and taking care of other household needs, must be confronted with turbid water conditions. The residents' water sources provided by the company instead of the muddy river, were apparently not facilitated properly and appropriately, the location of the community water pipes that were simply placed in the river, at what point 01°56'24.7 "LS and 121°18' 31.8 "BT, the location is right in the middle of the Company's Permit area and not far from CEKDAM which is at the point 01 °56'24.3" LS and 121 °18'45 "BT.

Moreover, the residents' drinking water pipes that should be facilitated by good standards by the company, in fact, are only placed in the river without filtering, without barrier fences and storage tanks, so that if there is rain or activity on the pipe, the turbid water will go straight into the pipe. It is different from water pipes that are flowed to factories/smelters which are first flowed into reservoirs, through filtering and given guardrails and restrictions on entering the basin area.

Also, the silting of the coast occurs with mud thickness reaching 2 meters at the edge of seawater at low tide. The muds are sediment from mud mixed with river water and come from the remnants of the company's excavation (especially CEKDAM). The negative impact of the silting of the coastal area is the loss of living seaside biota such as clams and several other types of shellfish, as well as small fish and crabs that are usually under the houses of residents when the water is high tide. The area of pollution/mud that blends and makes the seawater turbid colored appear in layers, the first layer is the location of seawater siltation and bright yellow, this first layer looks similar to river water when flooding, in this layer the water also remains solid yellow even if the water is high tide or low tide.

The second layer is blurred yellow, this second layer has included deep seawater because the territory has crossed the boundaries of 'ponds' and 'cages' residents. After the second layer, the water is still as colorless as seawater in general. Besides being caused by mud from the company's exploitation area, according to the residents, the turbidity of the deep seawater was also due to the activities of the company's 'Ponton Ship' which contained Nickel coming out of 'Lambolo Bay'. The alternating current of pontoon boats that make waves in the waters of the Lambolo bay disrupts the pile of land leftover from the company's activities on the coast, which in turn causes the soil to mix with the soil. The Pontoon Boat activity also contributed to the turbidity of seawater in Lambolo Bay.

Furthermore, to waves from the pontoon boat which caused the mixing of piles of soil with water, the waves also pose a threat of erosion that continuously erodes the edges of the small islands in the bayou bay, the erosion, if left unchecked, will threaten the survival of small islands around Lamboloolo bay. Lambolo Hamlet region in the form of a bay surrounded by small islands around it makes the area far from the waves of the sea. With the geographic location of the Tomori bay, of course, it makes Tomori Bay a paradise for coral reefs and various species of fish that live in it. The threat to coral reefs and undersea ecosystems is certainly one of the important concerns given the increasingly massive activities of pontoon boats and sludge leftover from the company's excavation.

Burning leftovers from the factory area are also one of the most obvious lookouts when we are on our way to the factory area. The smoke produced by the factory is black and just breaks down in the air. In the afternoon and morning, the village atmosphere looks foggy like dew, but the smell that smells very clearly smells of smoke from the burning of the factory. According to one employee, at certain times, toxic gases from nickel combustion are sometimes just thrown away in the factory area by the company.

The livelihoods of the residents of Ganda-Ganda Village especially Lambolo hamlet are from agriculture and sea products (fishermen). In addition to farming and fishing, one of the jobs that feed residents is to look for resin and rattan (hhbk) around the mountains of Lambolo, the one-smell mountain, and the flag mountain. The presence of the company with the consequences of damage and environmental pollution generated by the company's activities forced some residents to switch professions from previously farming/gardens and fishermen, to company employees. Only a few small groups remain farmers, fishermen and non-timber forest product seekers.

Since the pollution of Tomori bay waters by the mud from the company's processing, fishermen can no longer fish around the bay. Cages and fishponds installed at a distance of  $\pm 500$  m from the seashore with a depth of 7 (when it was not muddy) now no longer produce fish. The thickness of the mud makes the cages and ponds installed by the residents unproductive, one of which is also caused by siltation by the mud. When the water recedes, the ponds and cages are also shallow. In addition to mud, pontoon ship activities also disrupt the existence of cages and fishponds residents. The waves generated by company pontoon ships often cause damaged cages and fishponds to residents.

According to one resident interviewed by Jatam, before the company had not operated and when the sea was not polluted, the fish in the bay was very abundant. Clams (shells) that are on the coast are also very many. If it goes to sea at 05.00 in the morning, then at 09.00 in the morning the fishermen have returned to the land with a net profit of sea products that can reach Rp. 300,000, - if sold. Not to mention if you take fish in cages and ponds or just collect shells on the beach for sale, then you can earn more than that in a day. Now, the situation has changed. Fishermen must go down to the sea when the water is high tide and must go home also when the water is high tide. Because if the water is receding, the fishing boat will be confronted with mud, and it is very impossible to pull the boat ashore with muddy conditions. It is not uncommon for fishermen to be more than 12 hours at sea because they are late coming home and the water has receded so they have to wait for the tide to return to shore. The distance that must be traveled to get fish even more or less 3 km towards the exit of the bay until the seawater looks clear. This condition is even more difficult for fishermen who do not use motorboats and only rely on energy for rowing. Besides, income for fishermen becomes uncertain. The massive activity of the company and the pontoon boats that commute in and out of the Lambolo Bay keeps fish away from the bay location. It is not uncommon for fishermen to go home empty-handed even though they have been at sea all day.

The same conditions are bad for farmers and resin and rattan seekers. Agricultural land is no longer as fertile as it used to cause farmers' incomes to be uncertain and even reduced. Floods that sometimes inundate agricultural residents often cause farmers to have failed to harvest and damage to crops planted. The same is true for rattan seekers and resin resins. The operation of the company by exploiting forests up to a few kilos in the direction of the mountains makes the resin and rattan resin seekers at risk of losing their livelihoods. This exploitation has displaced many damar and rattan trees that grow wild in the Lambolo mountains. According to resin gum seekers, in the past if they were looking for resin gum, starting from 6:00 am to 12.00 noon, they could collect 60 kg of gum resin, and then went home because of no reason to be able to pick up more heavy resin loads than that. Now, even though a day looking for resin in the forest, at most only around 7 kg are collected. Many rattans died by the company's tools.

Moreover, the threat of health problems is one of the important things to pay attention to in the mining circle location of the Ganda-Ganda village especially in Lambolo hamlet. The lack of adequate medical facilities and the environment damaged by mining activities can be one factor that can leave people around the mine vulnerable to disease. One threat of disease that can be affected by citizens is URI (Upper Respiratory Tract Infection). Along the double village road to the village of Lambolo, can be witnessed with the naked eye road conditions are muddy and dusty. The condition of the road is damaged, even in some road bodies, there are holes. While the mud and dust come from the remnants of the company's excavation and mining equipment activities that pass through the road.

One of the most dangerous things about mining activities is the highly visible residual combustion that is visible in the area of the company. The remnants of the burning that came out of the company chimney certainly posed a threat to the health of the residents given the location of the company which was right at the entrance of the Lambolo village. One of the employees of PT. CORII claimed to have experienced dizziness to faint while working in the factory, it was experienced when he had inhaled the combustion gases at PT.CORII, but the company said that the employee fainted because the employee was exhausted and did not eat before working. Ironically, according to the employee, the company always blocks the employee if he is going to do a health check at the hospital.

Inadequate water sources can be one of the things that can threaten the mental health of Lambolo villagers. The condition of the water in Lambolo hamlet seems turbid, this is because the water pipes that the company places are not well facilitated. At certain times, the water even becomes itchy if touched by the skin. This water condition is very dangerous, especially for children who are still growing up in Lambolo village. Several times residents complained about water to the company, but until now, there has been no resolution from the company regarding the problem.



Source: iglobalnews.co.id, 2019.

### **Figure 3. Floods and Forest Damage in Morowali Regency**

As a result of the mine, at the beginning of June 2019, flash floods hit Sulawesi, which cut off the roads and bridges that connect Central Sulawesi and Southeast Sulawesi, submerging settlements in Morowali, North Konawe, and Konawe. A mining company, General Sumber Mining Indonesia (GSMI), an Aneka Tambang subsidiary that has been operating for nine months in Petasia Sub-district, Morowali Regency, is suspected of contributing to the destruction of the environment and livelihoods of local communities. Also, PT GSMI is a company that piles up a port runway in the middle of the Ganda-Ganda Village settlement which makes dozens of fishermen unable to enjoy the results of their business at the "Karamba" location. In addition to flooding and water pollution, residents also complained of air pollution due to mining dust.

Apart from Morowali and North Morowali, environmental damage due to mining activities was also found in Poboya Village. Poboya Village is one of seven villages within the administrative area of Central Sulawesi Province, Palu City, Mantikulore Sub-district. Poboya Village is about 7.1 km from Palu City Center with an area of 63.1 KM<sup>2</sup> and an altitude of 30 MDPL. The 50% of the Poboya Kelurahan consists of mountains, 25% of the hills, and 5% of the Mainland. The village area is crossed by a river called Pondo River which also flows across three other villages, namely Lasoani, Tanamodindi, and Talise. Poboya Village in the north is bordered by the Tondo area, in the south, it is bordered by Lasoani, in the West it is bordered by Talise and Tanamodindi, in the east by Parigi Moutong Regency.

As in other regions in Central Sulawesi, Poboya Village holds precious metal content (Gold). Because of the abundant availability of gold in the region, many people came to try their fortune with the pattern of mining, community mining, until there was community mining activity. Initially, the Poboya mine was first stretched in 2008, because in that year there were no standard rules governed by the government regarding community mining, the Poboya mine was handled by an adat institution (*adat Kaili tribe*). Then in 2011, the Palu City government issued PERDA No. 3 of 2011 concerning Smallholder Mining to legalize community mining in Poboya Village. Until its peak, in 2014 Poboya had 3500 active miners with drum totaling 20 thousand units.



Source: Jatam Sulteng, 2017.

#### Figure 4. Mining Activities in Poboya Village, Palu City

The location of this gold mine is located in three mountains, namely mining I in the Bulumosule mountains or also known as the old mine, mining II in the Watutempa mountains, and Mining III in the Ranodea mountains. With that many miners in 2014, it certainly invites the curiosity of entrepreneurs who want to benefit. Based on the results of the JATAM Central Sulawesi investigation, in 2014, several companies began to arrive to conduct mining including those identified; PT. Panca Logam Utama, PT. MADAS, PT. MAHAKAM, PT. Indo Kimia Asia Sukses, and PT. Geotechnical Engineering Dynamics.

Meanwhile, long before, in 1995 the Minister of Forestry issued Decree No: 461 / Kpts / II / 1995 dated September 4, 1995, to establish a conservation area of 8,100 Ha. The term Taman Hutan Raya (TAHURA) Palu. The area divides the administrative areas of Palu City and the Sigi Regency. Tahura as a conservation area has restrictions and restrictions that must not be violated by anyone, including the prohibition of entering the area in addition to the purpose of research, education, and recreation of natural attractions. After the boundaries were made, in 1999 the Tahura area was established based on the Decree of the Minister of Forestry No: 24 / Kpts-2/1999 dated 29 January 1999 concerning the

determination of the hammer forest park area. With an area of 7,128 hectares, the Tahura area was formed as a result of the merger of 1,000 hectares of the Poboya Nature Reserve. Location of XXX national greening week (PPN) or Kapopo tourism forest in all 128 hectares and also Paneki Protected Forest Area covering 6000 Ha. Based on the results of the Jatam Central Sulawesi investigation, the mining location controlled and managed by this company is the mining site II of the Watutempa mountains. Watutempa Mountains are in the Central Forest Park Area (TAHURA) of Central Sulawesi. It can be seen when we enter the mine exploitation site will pass through the main gate that reads Welcome Central Sulawesi Regional Government Forest Service, UPTD TAHURA Poboya. TAHURA Central Sulawesi covers an area of 7,128 hectares.

### **The Importance of a Good Mine Management Policy**

Accelerated development through natural resource management, especially through the mining sector, has become a popular discourse in almost every region that has mining potential. Increasing Local Revenue (PAD), accelerating economic growth, providing employment, and alleviating poverty are the central issues of massive mining exploitation. Therefore, in mining activities good mining management practices are needed. The good mining practice paradigm is defined as a mining business activity that fulfills fixed provisions, criteria, rules and norms so that the utilization of mineral resources provides optimal results and minimizes adverse impacts. All of this includes licensing, mining techniques, occupational safety and health, environmental care, conservation, enhancing value-added and community development around the location of activities, and preparing for closure and post-mining, within the framework of applicable laws and standards, in accordance with the stages the stage of mining activities (Sudrajat, 2018; Suyartono, 2003).

Good mining management implies the application of sustainable development principles. The paradigm of sustainable development is based on the principle of optimal use of potential resources through increased value-added that is fair and environmentally sound while taking into account the existence of future generations. Holds that this concept can only be implemented well if it involves all stakeholders optimally in the form of partnership (Soelarno, 2006). Thus, a mindset based on justice and social equality, holistic, comprehensive, integrated, pluralism, and long-term insight are needed. Mining is not merely oriented towards growth, but a development that is empowering oriented, captures participatory participation openly, and no less important is mining must always pay attention to aspects of the future (Upe, 2018).

In the mining political ecology perspective, sustainable mining management implies the synergy of the economic, social and ecological dimensions as intended by Elkington (1997) as a triple bottom line principle (profit, planet, people). In line with this, the has developed ten principles of sustainable mining management, including (International Council on Mining and Metals, 2003):

1. Apply ethical business practices and sound systems of corporate governance and transparency to support sustainable development.

2. Integrate sustainable development in corporate strategy and decision-making processes.
3. Respect human rights and the interests, cultures, customs and values of employees and communities affected by our activities.
4. Implement effective risk-management strategies and systems based on sound science and which account for stakeholder perceptions of risks.
5. Pursue continual improvement in health and safety performance with the ultimate goal of zero harm.
6. Pursue continual improvement in environmental performance issues, such as water stewardship, energy use and climate change.
7. Contribute to the conservation of biodiversity and integrated approaches to land-use planning.
8. Facilitate and support the knowledge-base and systems for responsible design, use, re-use, recycling and disposal of products containing metals and minerals.
9. Pursue continual improvement in social performance and contribute to the social, economic and institutional development of host countries and communities.
10. Proactively engage key stakeholders on sustainable development challenges and opportunities in an open and transparent manner.

Some basic principles in mining management as outlined above confirm that the parameters of good mining feasibility should meet three main elements, namely environmental, social, and economic elements. These three elements are interrelated and not only prioritize one element. One of the elements that are not fulfilled, mining practices will not bring prosperity to the people. The matter which is often overlooked from these three elements is the social and environmental elements as is the case with mining in Konawe Island Regency. The presence of many Mining Business Permits in this region reflects the bias of the spirit of regional autonomy. Local people who should be one of the stakeholders are not involved at all in determining the direction of mining management policies. Worse yet, their aspirations were confronted with security forces accompanied by violence. Therefore, an important question that should be analyzed further is where is the position of the government?

The mastery of natural resources for economic interests from an ecological political economy perspective always starts with the question of how (in what ways) actors control natural resources, how (forms) access and control are seized for their interests. How is justification or justification posted and processed to control these natural resources? The economic analysis of natural resource ecology also leads to critical questions, about who will ultimately control what (who controls what), who will finally get what (who gets what), who will finally get how much benefit (how much do they gain the benefit) and who ultimately bears negative risks (social costs or negative externality costs) over the operation and expansion of the control of natural resources (who suffers much from the operation of resources exploitation) in an area (Dharmawan, 2018). Studies of political ecology in the third world generally focus on the discussion of the effects of marginalization due to industrial capitalism and the efforts of marginal groups to fight the dominance of certain groups (Bryant & Bailey, 1997; Forsyth, 2003; Foster, 2000).

## 5. CONCLUSION

Management of natural resources (including mining) in Indonesia refers to the 1945 constitution article 33, which in principle the earth and water and the wealth within it are controlled by the state and used as much as possible for the prosperity of all people. One derivative of the constitution is the birth of Law no. 4 of 2009 concerning Mineral and Coal Mining. The spirit of the Act is the management of mining Minerba that is independent, reliable, transparent, competitive, efficient, and environmentally friendly, to ensure sustainable national development. In practice mining management in Central Sulawesi has not fully met the spirit of the Act, economically the mining sector can stimulate the local economy (positive impact), but in environmental aspects, mining presents environmental damage that threatens the lives of local communities around the mining area. Mining activities in Morowali Regency, North Morowali, and Palu City present a portrait of the environmental damage. As a suggestion in this paper, the government policy in managing mines in Central Sulawesi in addition to being directed towards pursuing economic targets (local revenue), must also pay attention to environmental aspects through a good mining policy (good mining practice).

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